

REMARKS

Reconsideration of the pending claims is respectfully requested. The -specification has been amended to address a minor typographical error. The description of Figure 1 has been amended to reflect that it represents both a conventional PLL as well as a PLL incorporating Applicants' inventive charge pump. Thus, Applicants respectfully traverse the requirement that Figure 1 be labeled as prior art.

All claims stand rejected as anticipated by US Patent No. 6,686,794 to Abidin et al or as obvious in view of Abidin and the prior art described in the pending application. Applicants traverse these rejections.

The Examiner's attention is directed to Applicants' Figure 2, which shows an exemplary low-voltage differential charge pump in accordance with the invention. This charge pump differs structurally from the cited prior art in a way that enables low voltage operation. As explained by the Applicants on, for example, page 11, line 16 through page 12, line 2, in low voltage operation the differential output nodes A and B must be voltage isolated from the current switch formed by differential pairs N1/N2 and N5/N6. Otherwise these nodes may be pulled to ground, thereby causing jitter and other undesirable effects. In the described embodiment these nodes are isolated by resistors R1 through R4 from the differential pairs of transistors N1/N2 and N5/N6 that form the current switch. Other isolation techniques may be used.

Claim 1 as amended reflects this advantageous feature in that it now requires that "the differential output nodes are voltage isolated from the current switch." In sharp contrast, Abidin plainly shows in Figure 1 that its current switch

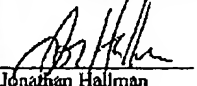
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(formed by differential pairs 21/22 and 23/24) couples directly to output nodes OUT+ and OUT-. Thus, should Abidin's charge pump be driven with low supply voltages, the voltages on these output nodes would be subject to undesirable jitter. Accordingly, for at least this reason, claims 1- 7 are not anticipated by the Abidin reference. Similarly, claim 14 as amended and claim 15 are not anticipated by Albidin.

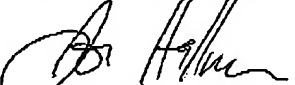
Independent claim 8 has been amended analogously as discussed with regard to claim 1. Applicants submit that in light of these amendments to claims 1, 8, and 14, none of the pending claims is obvious in view of Abidin or the other prior art of record because there is no teaching or suggesting in that art of providing the claimed voltage isolation.

If the Examiner has any questions or concerns, a telephone call to the undersigned at (949) 752-7040 is welcomed and encouraged.

I hereby certify that this correspondence is being facsimile transmitted to the Commissioner for Patents, Fax No. 571-273-8300 on the date stated below.


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Respectfully submitted,


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